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PATENT SPECIFICATION

DRAWINGS ATTACHED

882,038



Date of Application and filing Complete Specification April 13, 1960.

No. 13181/60.

Complete Specification Published Nov. 8, 1961.

Index at acceptance:—Class 44, BE4D.

International Classification:—F06b.

COMPLETE SPECIFICATION

Improvements in Clamps

I, EDWARD OHLSON, a Swedish subject, of 55, Göketorpsgatan, Gothenburg, Sweden, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to clamps of the kind produced by bending transversely an elongated sheet-metal blank formed with identical, preferably circular, apertures which in the bent condition of the blank are parallel and aligned, there being formed in the intermediate portion of the blank a slot interconnecting said apertures and having its delimiting edges disposed in spaced interrelation.

Clamps of the kind referred to are used as pipe clamp, for instance when mounting exhaust pipes in motor cars. In its bent condition such a clamp, in essence, has the configuration of a split ring having at the location of the bend a U-shaped channel interrupted by the slot or ring gap. The clamp can be compressed by means of a screw bolt passed through said channel and a nut received on the bolt.

In prior art clamps of the kind referred to the slot formed in the blank and interconnecting the apertures therein is disposed, prior to the bending thereof, symmetrically relative to a straight line interconnecting the centres of the apertures, so that, upon clamping the clamp formed by bending the metal blank about the pipe, the portion of the circumference of the pipe opposite the slot will not be subjected to any clamping action. Due to this, upon tightening the clamp a deformation of said portion will tend to result, causing the same to be squeezed out into the slot.

The present invention has for its object to overcome the drawback referred to and is mainly characterised in that, in the unbent condition of the metal blank, the ends of the slot are situated on either side, respectively, of an imaginary straight line interconnecting the centres of the apertures.

Further according to the invention, each one of the edges delimiting the slot suitably has the configuration of a slightly S-shaped curve having its end portions extending in parallel, or approximately parallel, relation to the line interconnecting the centres of the apertures.

The lateral edges of the intermediate portion of the blank, being usually substantially straight-lined and parallel to the longitudinal direction of the blank, according to a preferred embodiment of the invention may be formed with end portions curved obliquely inward towards the imaginary straight line interconnecting the centres of the apertures.

In one particular embodiment of the invention, the apertures are formed with edge flanges which in the bent condition of the blank are directed towards each other and which are suitably of a depth such as to cause their extreme edges to abut.

The invention will be described hereinafter with reference to the accompanying drawings which illustrate two embodiments thereof by way of example, and in which:—

Figure 1 is a plan view of a blank for a clamp according to the invention;

Figure 2 shows a clamp produced by transversely bending a blank according to Figure 1;

Figure 3 is an edge elevational view of the clamp shown in Figure 2;

Figures 4, 5 and 6 are projections corresponding respectively to Figures 1 to 3 and showing a clamp according to another embodiment of the invention; and

Figure 7 is a cross-section through the clamp substantially along the line VII—VII in Figure 5.

The blank shown in Figure 1 and serving for forming the clamp illustrated in Figures 2 and 3, consists of an elongated piece or strip of sheet metal which is formed near its ends with identical, circular apertures 1. The intermediate portion 2 of the strip situated between

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the apertures 1 is formed with a slot 3 inter-
connecting the two apertures and having its
mutually spaced edges 4 slightly S-shaped
and extending from one aperture 1 to the
other in a manner to cause the end portions
of the slot to be disposed on either side res-
pectively, of a line A—A interconnecting the
centres of the apertures. The clamp shown in
Figures 2 and 3 has been formed by bending
the intermediate portion 2 of the blank shown
in Figure 1 along a line perpendicular to
the line A—A, so as to cause the apertures
1 in the thus bent condition of the metal strip
—in which its end portions extend in spaced
parallel interrelation to be coaxially aligned.
The two lateral edges 5 of the intermediate
portion 2 which are substantially parallel to
the longitudinal direction of the strip blank,
are formed with end portions 6 which are
curved obliquely inward towards the line
A—A.

The parts of the intermediate portion 2 dis-
posed on either side of the slot 3 form, in
the bent condition of the blank, coaxially
aligned channels through which a screw bolt
7 indicated in broken lines in Figure 2 is
intended to be passed. Received on the end of
bolt 7 is a nut 8 adapted, after the clamp
has been placed around a pipe not shown in
the drawings, to be tightened to move the
parts of the intermediate portion 2 disposed
on either side of the slot 3 towards each other,
whereby the clamp is clamped about the pipe.
Owing to a slight overlap, as seen in the axial
direction of the clamp apertures 1, between
the edge portions of the apertures 1 disposed
adjacent the edges of the slot 3 intersecting
line A—A (see Figure 2), a pipe on which
the clamp is mounted will be completely en-
circled by the clip, so that there will be
no danger of deformation of the pipe upon
tightening of the clamp.

In the embodiment shown in Figures 4
to 7 each of the apertures 1 is formed with a
bent-off edge portion 9 forming an edge
flange extending along the edge of the aperture
and projecting at right-angles to the plane
of the aperture. The edge flanges 9 are
directed towards each other and abut along

their extreme edges so as to form between
the pipe-receiving apertures a sleeve-like por-
tion, thus resulting in a larger pipe engaging
surface being established than in the simpler
embodiment shown in Figures 1 to 3.

WHAT WE CLAIM IS:—

1. In a clamp of the kind produced by bend-
ing transversely an elongated sheet metal
blank formed with identical, preferably cir-
cular, apertures which in the bent condition
of the blank are parallel and aligned, there
being formed in the intermediate portion of
the blank a slot interconnecting said apertures
and having its delimiting edges disposed in
spaced interrelation: an arrangement which
is characterised in that, in the unbent condi-
tion of the metal blank, the ends of the slot
are situated on either side respectively of an
imaginary straight line interconnecting the
centres of the apertures.

2. A clamp according to Claim 1 character-
ised in that each of the edges delimiting the
slot has the configuration of a slightly S-
shaped curve having its end portions extending
in parallel, or approximately parallel, relation
to the imaginary line interconnecting the
centres of the apertures.

3. An arrangement according to Claim 1 or
2, in which the two lateral edges of the inter-
mediate portion are substantially straight-
lined and parallel to the longitudinal direction
of the metal blank, characterised in that the
end portions of the said lateral edges are
curved obliquely inward towards the imaginary
line interconnecting the centres of the aper-
tures.

4. A clamp according to any one of the pre-
ceding claims, characterised in that the aper-
tures are formed with edge flanges which in
the bouble bent condition of the metal blank
are directed towards each other.

5. A clamp according to Claim 4, character-
ised in that the extreme edges of the flanges
in the bent condition of the metal blank abut
one another.

EDWIN C. AXE & CO.,
27, Chancery Lane, London, W.C.2,
Agents for the Applicant.

Fig. 1

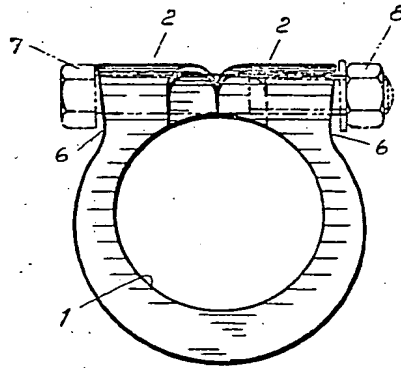
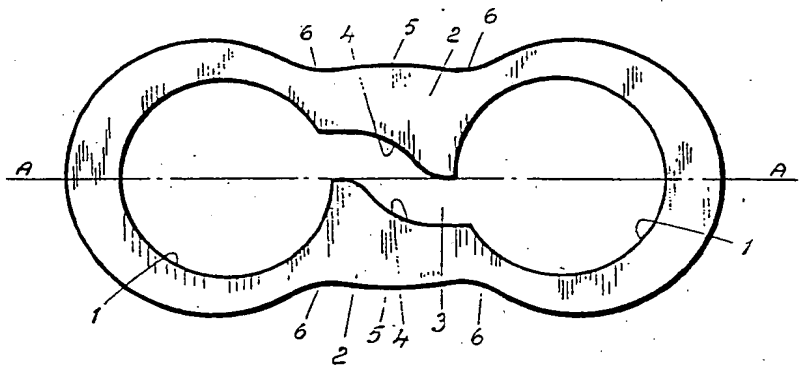


Fig. 2

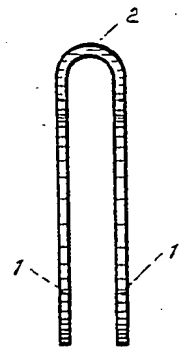


Fig. 3

Fig. 1

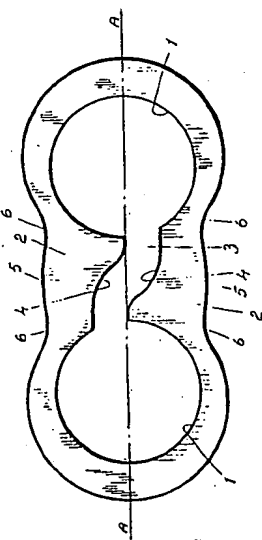


Fig. 2

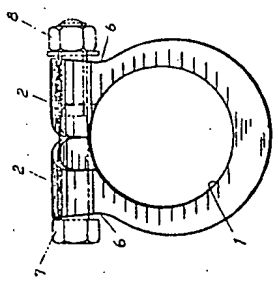


Fig. 3

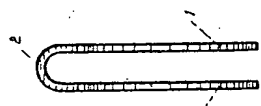


Fig. 4

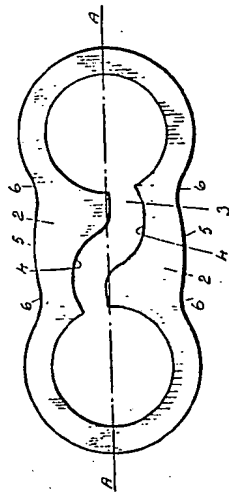


Fig. 5

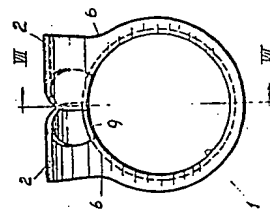


Fig. 6



Fig. 7



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COMPLETE SPECIFICATION

2 SHEETS

This drawing is a reproduction of
the Original on a reduced scale
Sheets 1 & 2

Fig. 4

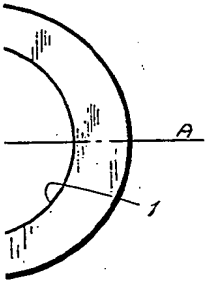
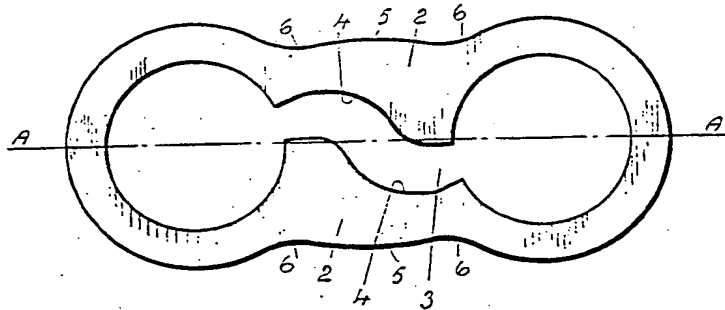


Fig. 5

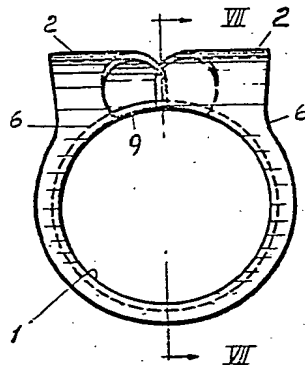


Fig. 6

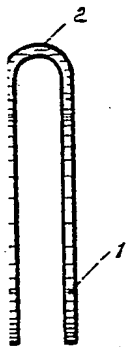
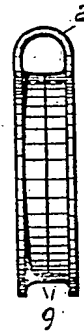


Fig. 3

Fig. 7

